CLAIMS

1. A method for placing a multitude of shaped parts of solder material on a bond pad arrangement of a substrate, said bond pad arrangement comprising a multitude of bond pads, and for subsequent re-melting of the shaped parts of solder material on the bond pads;
c h a r a c t e r i s e d b y
the following process steps:
   - Arrangement of a template device (21, 40, 51, 56, 65, 75) comprising a multitude of template apertures (27, 48, 61, 70) for accommodating shaped parts of solder material (20) opposite a substrate (23, 49, 64) comprising a bond pad arrangement (29), such that the shaped parts of solder material are associated with the individual bond pads (28, 50, 63);
   - Application of laser energy to the shaped parts of solder material (20) accommodated in the template apertures (27, 48, 61, 70) using a laser device (39) arranged at the rear of the template device (21, 40, 51, 56, 65, 75) such that said laser energy is applied to the shaped parts of solder material through the template device.

2. The method according to claim 1,
c h a r a c t e r i s e d i n t h a t ,
in the template device (40, 51), singling out of the shaped parts of solder material (20) from the bulk of shaped parts of solder material accommodated in the template device, takes place by filling the template apertures (48) arranged in an aperture screen (41).

3. ~~The method according to claim 1,~~
c h a r a c t e r i s e d i n t h a t ,

by means of the template device (56, 65), singling out of the shaped parts of solder material (20) from a quantity (57) of shaped parts of solder material outside the template device, takes place by filling the template apertures (60, 70) which are arranged in an aperture screen (58, 66).

4. The method according to one or several of claims 1 to 3, characterised in that, prior to the application of laser energy to the shaped parts of solder material (20), scanning of the template apertures (27, 48, 61, 70) using an optical scanning device (32) for detecting shaped parts of solder material (20) takes place.

5. The method according to claim 4, characterised in that, application of laser energy to the shaped parts of solder material (20) takes place via the optical scanning device (32).

6. The method according to claim 2, characterised in that, filling of the template apertures (48) arranged in the aperture screen (41) of the template device (40) takes place by means of a filling chamber (47) which can be moved over the aperture screen, said filling chamber being open towards the aperture screen.

7. The method according to claim 2, characterised in that, filling of the template apertures (48) arranged in the aperture screen (41) of the template device (51) takes place by means of a paddle-wheel device (52) which is guided parallel to the surface of the aperture screen, rotating on its movement axis (52).

8. The method according to claim 3,
characterised in that,
filling of the template apertures (60, 70) arranged in the aperture screen (58, 66) of the template device (56, 65), takes place by means of pressure below atmospheric.

9. The method according to one or several of the preceding claims,
characterised in that,
the pressure exerted on the shaped parts of solder material (20) accommodated in the template apertures (70) for establishing contact with the bond pads (63) is generated by means of pressure above atmospheric.

10. A device for placing a multitude of shaped parts of solder material (20) on a bond pad arrangement (29) of a substrate (49), said bond pad arrangement comprising a multitude of bond pads (50), and for subsequent re-melting of the shaped parts of solder material on the bond pads; comprising a template device (40, 51) with a container (47, 51) for accommodating a quantity of shaped parts of solder material, with the container comprising a container wall arrangement, designed as an aperture screen (41), for conveying shaped parts of solder material to the bond pad arrangement (29), and with the aperture screen comprising a singling-out device (47, 52) such that shaped parts of solder material which have been singled out from the quantity of shaped parts of solder material and allocated to individual bond pads (50) of the bond pad arrangement (29), are arranged so as to be exposed, in template apertures (48) of the aperture screen (41), and thus can be exposed to laser energy from the rear by means of a laser device (39).

11. The device according to claim 10,
characterised in that,

the singling-out device (47, 52) is designed so that it can be moved over the aperture screen (41).

12. The device according to claim 11,
characterised in that,
the singling-out device is a filling chamber (47) which can be moved over the aperture screen (41), said filling chamber being open towards the aperture screen.

13. The device according to claim 11,
characterised in that,
the singling-out device is a paddle-wheel device (52) which can be moved over the aperture screen (41), with radially open transport compartments delimited by paddles (54) of the paddle-wheel device.

14. The device according to one or several of claims 10 to 13,
characterised in that,
the singling-out device (47, 52) is accommodated in a space (45) which is closed by the template device (40, 51) whose rear wall (42) which is opposite the aperture screen (41) is made so as to be transparent.

15. A device for placing a multitude of shaped parts of solder material (20) on a bond pad arrangement of a substrate (64), said bond pad arrangement comprising a multitude of bond pads (63), and for subsequent re-melting of the shaped parts of solder material on the bond pads, with a template device (56, 65) which is configured as a singling-out device and comprises a housing with an aperture screen (58, 66) comprising a multitude of template apertures (60, 70) for accommodating shaped parts of solder material, and which

further comprises a transparent rear wall (67), opposite the aperture screen.

16. The device according to claim 15,
characterised in that,
the diameter of the template apertures (60) formed in the aperture screen (58) is smaller than the smallest diameter of the shaped parts of solder material (20).

17. The device according to claim 15,
characterised in that,
the diameter of the template apertures (70) formed in the aperture screen (66) is larger than the largest diameter of the shaped parts of solder material (20), and that the distance a between the aperture screen and the rear wall (67) is smaller than the smallest diameter d of the shaped parts of solder material (20).

18. The device according to one or several of claims 10 to 17,
characterised in that,
the wall structure of the aperture screen (24, 41, 58, 66, 74) and/or the sidewalls (46) of the filling chamber (47), which can be moved over the aperture screen, is flexible across the area of the aperture screen.

19. The device according to claim 18,
characterised in that,
the wall structure comprises at least three layers, with a flexible compression layer (79, 82) sandwiched between two wear-resistant surface layers (77, 78, 80, 81).

20. The device according to claim 19,
characterised in that,

the compression layer (79, 82) is made from a plastic material, and the surface layers (~~77, 78,~~ 80, 81) are made from metal.